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Coalition application of the Joint Battlespace Infosphere (JBI)

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Publish/subscribe information dissemination mechanisms are well suited to coalition engagements because they are inherently flexible and able to adapt to many of the challenges of standing up a coalition information infrastructure. However, as one moves beyond the abstract notion of publish and subscribe (pub/sub) to the realities of current commercial capabilities and requirements of military deployments in coalition environments, it becomes apparent that there are several challenges to achieving the promise of pub/sub information exchange architectures.

Publish/Subscribe architectures are used to disseminate information from those who have it (publishers) to those who need it (subscribers). Subscribers typically express their information needs with a predicate to limit the amount of extraneous information they receive. In a coalition deployment, however, the right to publish and subscribe to specific information is subject to policy. In particular, publishers of information and overarching command authority may impose releasability restrictions (e.g. NATO-ONLY) on information that must be satisfied by the pub/sub infrastructure.

This paper considers the current state of commercial publish/subscribe technology and its relevance and limitations for coalition military deployment. Specifically, we will address how information is represented, filtered and controlled. Finally, we will describe the Joint Battlespace Infosphere, a US Air Force Research Laboratory project that seeks to harness the power of publish/subscribe architectures in a military context.